

Oscillating Heat Pipe (OHP) Products

ThermAvant Tech is the world's leading oscillating heat pipe (OHP) developer and manufacturer. We embed OHPs within materials to maximize thermal-mechanical performance and minimize Size, Weight, Power plus Cost (SWaP-C). High-tech firms and U.S. agencies use OHPs to deliver more power from smaller packages without temperature constraints imposed by status quo heat transfer solutions.

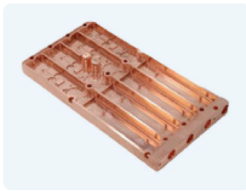
Features

- Thermal conductivity up to +100x base material's
- Gravity insensitivity, tested from 0 to 10g
- Lightweight, typ. 30% less than base material
- Producing in shapes from <1mm thick to >1m long
- Operable at heat fluxes up to +300W/cm²
- Available in 1,000s of material-fluid pairs

Applications and Industries

- **Device-level OHP** heat spreaders & packages
 - Opto-electronic microchips and Li-ion cells
- **Board-level OHP** heat sinks & chassis
 - Avionics, rugged computers and power electronics
- **Platform-level OHP** heat transporters & heat exchangers
 - Vehicle thermal control on land, air, sea and space
- **Other OHP** customized solutions, including
 - PCM sinks, flexible straps, thermal skins, and more

Example OHP Products



Radio-frequency (RF) modules for high heat flux transmit-recv arrays



Lightweight air- and conduction-cooled chassis for ruggedized, embedded systems



kW-class heat transporters, radiators for vehicle and power-gen systems



OHP Fluid-Material Compatibility Matrix*

OHP Base Materials	Common Temp. OHP Fluids				Extreme Temp. OHP Fluids		
	Water or Aqueous Solutions -30° to +350°C	Ammonia -20° to +100°C	Acetone +40° to +120°C Propylene -70° to +60°C Butane 0 to +110°C	Refrigerants R1233ZDE, R-1234yf, R134a, etc. -55° to +100°C	Cryo-Temp Nitrogen, Argon, Methane, etc. -205° to -85°C	Med-Temp, Methanol, Heptane, etc. +200° to +600°C	High-Temp. Sodium, Potassium, etc. +600° to +1200°C
Aluminum Alloys							
Copper Alloys							
Titanium Alloys							
Stainless Steel Alloys							
Nickel Alloys							
Low-CTE Metals							
Ceramics & Semiconductors							

* Thousands of fluid/material pairs available, fluids and materials herein are illustrative only as are the operating temperatures which will vary based on sizes, powers, etc.

■ Compatible, Proven at TAT; Qualified by Customer(s)

■ Compatible, Proven at TAT; Not yet qualified by Customer(s)

■ Compatible, Not proven at TAT, yet

■ Incompatible

Contact Us to Build Your OHP

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- AS9100 & ISO9001 Certified
- ITAR Registered
- Winner of R&D 100 Award, 2018